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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,854

05/26/2006

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06056

7584

23338 7590 03/04/2009
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EXAMINER

ABRAHAM, AMJAD A

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

03/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,854	Applicant(s) VON SCHROETER ET AL.	
	Examiner AMJAD ABRAHAM	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/19/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's remarks and amendments, filed on December 02, 2008, have been carefully considered. Claims 1-19 are currently pending.

Drawings

1. Examiner withdraws the objection to the drawings as stated in the previous office action dated December 02, 2008 due to applicant's submission a replacement drawings and specification.

Claim Objections

2. Examiner withdraws the objection to the claims as stated in the previous office action dated December 02, 2008 due to applicant's amendment of the claims.

New Grounds of Rejection

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically claim 1 (line 13) discloses the claim limitation "circumferential web" which has no conventional meaning in the art. It is not

Art Unit: 1791

clear if applicant intends that "circumferential web" is structurally different to that of the stimulus which is disclosed in the prior art and stated in page 8 line 5 of applicant's specification). It is also unclear whether the circumferential web must have multiple connection points that form around the periphery of the dental cap in connection with the mold blank.

5. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the claim limitation "in particular" in lines 5-6 is indefinite. It is unclear if the claim is limited by the limitation "in the area of the largest extent of the molded piece."

6. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the order of words makes the claims unclear.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1791

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. *Claims 1-10, 13, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (Hereafter, "APA"—See applicant's specification Page 7 to Page 8) in view of Filser et al. (WO 02/45614 A1—made of record by the applicant) whose English Equivalent is US Patent No. 7,077,391, which was relied on by examiner to make the following rejections).*

11. Regarding claim 1, APA teaches a manufacturing method for working a cap from a mold blank wherein a cap is brought out of the cap by removing a stimulus that is

Art Unit: 1791

between the cap and the mold blank. **(See applicant's specification on page 7 line 19 to page 8 line 9—discussing figure 1 which is prior art)**. APA goes on to teach that the removal of the stimulus is usually done after the working of the inner and outer surface. **(See page 8 lines 3-4 and also see applicant's figure 1)**.

- a. With respect to claim 1, APA does not explicitly teach wherein the cutting is shape cutting and wherein the stimulus is a circumferential web.
- b. However, Filser teaches wherein shape cutting **(machining-- see column 3 lines 62-66)** is applied to holding webs **(circumferential web)** which is the connection between the dental workpiece and the blank. **(Also see figures 7-10)**.
- c. APA and Filser are analogous art because they are in the same field of endeavor which is forming a dental cap from a mold blank. At the time of the invention, it would have been obvious to one having the ordinary skill in the art, having the teachings of APA and Filser before him or her, to modify the teachings of APA to include the teachings of Filser for the benefit of applying holding webs or connection points to the dental cap in order to reduce the size of a stimulus and thus create a more uniform product. Filser teaches that when the webs are separated the workpiece can be ground smooth, leaving a dental cap with little to no defect. (See Filser column 5 lines 42-48). Filser goes on to teach that webs can be added to the workpiece in order to reduce the forces that act on a workpiece and therefore prevent any unwanted deformation. (See column 5 lines 56-65). Therefore it would have been obvious to one having the ordinary skill in

Art Unit: 1791

the art to reduce the stimulus taught in APA by adding a holding web structure which had multiple connection points around the workpiece in order to ensure that the workpiece did not have additional stresses to one side of the workpiece that would cause deformation.

12. Regarding claims 2-4, APA does not teach: (1) wherein in that the circulating partition wall (32) is split via a circular (circulating) milling, (2) wherein the membranous connection (132) is destroyed during manual pressure on the casting, and (3) wherein the membrane-like connection (132) is split with a knife-like tool, such as a scalpel.

d. However, Filser teaches wherein milling cutters, grinding or special machining tools can be used to remove the holding webs. **(See column 1 lines 50-55, column 1 lines 35-45, claims 1 and 13).**

e. It would have been obvious to split the circumferential web or the membranous connection by way of circular milling, manual pressure, or a scalpel as these are well known equivalents to the milling and grinding machining tools taught by Filser and it would have been obvious to try one of these well known machining process to remove the web or membrane..

13. Regarding claim 5, APA teaches wherein the stimulus is trained on the outer boundary of the dental workpiece. **(See figure 1 in applicant's specification).**

f. Filser further teaches that the dental workpiece is held by webs at the periphery of the piece. **(See figures 7-10).**

Art Unit: 1791

g. It would have been obvious for one having the ordinary skill in the art to attach the web to the largest area of the workpiece for the greatest support as one would have been motivated to ensure that the workpiece would not give way.

14. Regarding claim 6, APA teaches that the inner and outer contour is finished on the workpiece before the stimulus is removed. **(See page 8 lines 3-4 and also see applicant's figure 1).**

h. Obviously one of the inner or outer contours must be worked before the other. Therefore, it would have been obvious to one having the ordinary skill in the art to work the inner before the outer or vice versa.

15. Regarding claim 7, APA does not explicitly teach wherein for the manufacture of a molded piece (24, 124), a rough milling takes place first, in particular with a meander-shaped strategy and then a fine milling, in particular with a circular strategy.

i. However, Filser teaches that it is conventional to machine a dental workpiece by a coarse (rough) and fine machining. **(See column 1 lines 38-41).**

i. It would have been obvious to do the rough milling before the fine milling in order to ensure the surface of the dental workpiece was smooth and suitable for commercial use.

16. Regarding claims 8-10, the combination of APA and Filser does not explicitly teach: (1) wherein before the connection is split, a smoothing of the inner contour (28, 128) and/or the outer contour (30, 130) takes place, and (2) wherein directly before splitting the connection (32, 132), the cavity of the molded piece (24, 124) is worked by

Art Unit: 1791

fine milling, and (3) that the molded piece (24, 124), separated from the mold blank (26, 126) is cleaned circular in the area of removed connection (32, 132).

j. However, Filser discloses that smoothing and fine milling, and general working of the workpiece can be done while the workpiece is still in the web.

(See column 5 lines 45-46—disclosing that there is machining of the workpiece before the webs are split). Also a smoothing operation is taught by Filser after the webs are split. **(See column 5 lines 47-48).**

k. Thus, it would have been obvious to apply the teachings of Filser to APA for the benefit of working the workpiece while the workpiece was still supported by the web. This would eliminate the need for post-processing the workpiece after the web is cut.

17. Regarding claim 13, APA does not explicitly teach that after extracting the molded piece (24, 124) on this, a remainder is removed though manual working, e.g. by scraping and/or milling.

l. However, Filser teaches that at the point of separation the workpiece is ground smooth. **(Column 5 lines 47-48).**

ii. It is a conventional goal of dental workpiece making to create a smooth workpiece which is defect free. Thus, it would have been obvious to smooth the remaining pieces left on the workpiece with a machining step such as manual working.

18. Regarding claim 17, APA does not teach that the mold blank is mounted rotatable and is worked along three axes by means of a movable milling tool.

Art Unit: 1791

m. However, Filser teaches a workpiece carrier that is used and can move rotary and three axes of translation. **(See column 1 lines 49-60).**

n. It would have been obvious to work a workpiece in all three directions as dental caps are three dimensional objects that working in inner and outer surfaces of the workpiece.

19. Regarding claims 18-19, APA does not teach that materials such as those made from pre-sintered or sintered ceramics material, such as zircon oxide or aluminum oxide are used as a mold blank (26, 126).

o. However, Filser teaches that blanks can be made of aluminum oxide and zircon oxide in the green or sintered state. **(See column 2 lines 39-49).**

p. It is well known in the art to make dental workpieces from a ceramic like zirconium oxide or aluminum oxide.

20. *Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (Hereafter, "APA"—See applicant's specification Page 7 to Page 8) in view of Filser et al. (WO 02/45614 A1—made of record by the applicant) whose English Equivalent is US Patent No. 7,077,391, which was relied on by examiner to make the following rejections) and in further view of Bodenmiller et al. (USP No. 6,495,073).*

21. Regarding claim 11, the combination of APA and Filser does not teach splitting the circulating partition wall (32), the molded piece (24) from a padded receptacle is

Art Unit: 1791

caught in a position, which corresponds to the position, or approximately to the position of the molded piece in the mold blank (26).

q. With respect to claim 11, Bodenmiller teaches wherein a dental workpiece can be extracted by using a collecting dish (part number 8) in conjunction with a fluid mat (part number 7). **(See figure 7 and column 8 lines 46 to 60).**

iii. The dental workpiece extracted or removed from Bodenmiller is caught in a position underneath its position in the mold blank through a wax melting procedure. This wax melting procedure will allow for the dental workpiece to fall out of the mold at a slower pace, thus weakening the impact of the workpiece against the fluid mat. The extraction assembly utilized by Bodenmiller is a common solution to the problem of eliminating post fabrication defects to a workpiece.

iv. While Bodenmiller does not explicitly teach the use of a padded receptacle, Bodenmiller does teach the use of a receptacle to catch the milled workpiece. Thus, it would be obvious to catch the machined workpiece in a padded container because one skilled in the art would want to ensure that the workpiece would have no defects from contacting a hard surface and causing an abrasion onto the workpiece. A defect free workpiece is sought after in the dental cap art and one would have been motivated to ensure that the workpiece was not scratched.

Allowable Subject Matter

22. Claim 12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

r. The prior art does not teach a holding web that is a perforated membrane connection.

23. Claim 14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

s. The prior art does not teach a holding web that is a perforated membrane connection wherein the holes are formed as a slot.

24. Claim 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

t. The prior art does not teach a holding web that is a perforated membrane connection wherein the holes are formed as holes formed in an elbow like section.

25. Claim 16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

26. Applicant's arguments with respect to claims 1-4 have been considered but are moot in view of the new ground(s) of rejection and/or unpersuasive.

27. **Applicant's Argument:** That the Filser reference differs from Applicant's claim language in that Applicant's claims differentiate from Filser based on the fact that risky rework is not necessary (Page 14 lines 3-7) and that the molded piece must be completely finished prior to splitting.

28. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., [the fact that risky rework is not necessary and that the molded piece must be completely finished prior to splitting.]) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

29. **Applicant Argument:** Applicant also argues that the webs of Filser do not read on their claims based on the fact that webs need to have a sufficient cross section in order to function (See page 15 lines 8-16).

30. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., [webs need to have a sufficient cross section in order to function.]) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification,

Art Unit: 1791

limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

31. **Applicant Argument:** Applicant also argues that the fact that Filser is machined after webs are broken makes it inoperable as to applicant's claims.

32. However, applicant has stated many times throughout their disclosure that post processing still might be necessary to smooth the work piece. (See remainders or remains in claim 13). Therefore Filser and the claims of the instant application act similarly in this sense.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMJAD ABRAHAM whose telephone number is (571)270-7058. The examiner can normally be reached on Monday through Friday 8:00 AM to 5:00 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Phillip Tucker can be reached on (571) 272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AAA

/Philip C Tucker/

Supervisory Patent Examiner, Art Unit 1791